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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/076,404	05/12/1998	DAVID J. ECKER	IBIS-0007	4802

34138 7590 04/17/2006  
COZEN O'CONNOR, P.C.  
1900 MARKET STREET  
PHILADELPHIA, PA 19103-3508

EXAMINER

BRUSCA, JOHN S

ART UNIT PAPER NUMBER

1631

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/076,404

Applicant(s)

ECKER ET AL

Examiner

John S. Brusca

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2003 and 11 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19-23 and 26-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-23 and 26-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/11/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This application has been reassigned to a new examiner.

***Inventorship***

2. In view of the papers filed 25 June 1999, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a) The inventorship of this application has been changed by the addition of John McNeil.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

***Drawings***

3. The drawings were received on 15 August 2003. These drawings are accepted.

***Claim Rejections - 35 USC § 112***

4. The rejection of claim 19 under 35 U.S.C. 112, second paragraph in the Office action mailed 15 October 2001 is withdrawn in view of the arguments and amendment filed 11 February 2002.

***Claim Rejections - 35 USC § 102***

5. The rejection of claims 21-23, 26-28, and 31 under 35 U.S.C. 102(b) over Romby et al. in the Office action mailed 15 October 2001 is withdrawn in view of the arguments filed 11 February 2002.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 21-23, 26-28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. in view of Arenas et al. in view of Vester et al.

The claims are drawn to a method of using an in silico virtual library of compound structure data to identify a structure that binds RNA. In some embodiments the identified compounds are ranked for binding strength, synthesized, and tested for binding. In some embodiments the RNA target is conserved among different taxonomic species. In some embodiments the RNA is ribosomal RNA.

Murray et al. shows a method of designing and use of virtual libraries of compounds to select structures that have a desired binding specificity in the abstract and throughout. Murray et al. shows ranking of members of the library on pages 203-204. Murray et al. shows an example

Art Unit: 1631

of thrombin inhibitors, and their subsequent synthesis and testing on page 204. Murray et al. does not show RNA binding compounds, ribosomal RNA targets, or a conserved RNA target.

Arenas et al. shows a screening method for compounds that bind RNA in the abstract and throughout. Arenas et al. shows that the compounds may be selected from peptides or small organic molecules in column 5, lines 62-67, and antibiotics in column 1, lines 56-59.

Vester et al. shows on the introduction on page 3577 and figure 1 that the peptidyl transfer region in bacterial ribosomes comprises a highly conserved 23srRNA region, which is also a binding site for a number of antibiotics. Vester et al. shows on page 3581 that mutants in this region have increased resistance to chloramphenicol, and on page 3584-3585 that the region is a chloramphenicol binding site.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the screening method of Murray et al. by use of the RNA targets of Arenas et al. because Arenas et al. shows bioassays that screen for compounds that bind to RNA targets, and further obvious to use ribosomal RNA targets because Vester et al. shows that ribosomal RNA is a site of action for antibiotics.

9. Claims 19, 20, 26, 27, 29, 30, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. in view of Arenas et al. in view of Sezerman et al. in view of Greig et al.

The claims are drawn to a method of using an in silico virtual library of compound structure data to identify a structure that binds RNA. The compounds are synthesized and analyzed by generation of ionized fragments (exemplified by use of mass spectroscopy) of the

Art Unit: 1631

RNA complexed with the compound. In some embodiments the identified compounds are ranked for binding strength.

Murray et al. shows a method of designing and use of virtual libraries of compounds to select structures that have a desired binding specificity in the abstract and throughout. Murray et al. shows ranking of members of the library on pages 203-204 for predicted binding strength. Murray et al. shows an example of thrombin inhibitors, and their subsequent synthesis and testing on page 204. Murray et al. does not show RNA binding compounds.

Arenas et al. shows a screening method for compounds that bind RNA in the abstract and throughout. Arenas et al. shows that the compounds may be selected from peptides or small organic molecules in column 5, lines 62-67, and antibiotics in column 1, lines 56-59.

Sezerman et al. shows in the abstract and throughout methods of using virtual peptide structures to measure binding affinity to a binding target.

Greig et al. shows use of electrospray mass spectroscopy of peptide-oligonucleotide complexes to measure binding strength, with results shown in figure 2.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the screening method of Murray et al. by use of the RNA targets of Arenas et al. because Arenas et al. shows bioassays that screen for compounds that bind to RNA targets. It would have been further obvious to use mass spectroscopy to analyze binding strength because Sezerman shows that peptides may be analyzed in silico for binding, and Greig et al. shows that mass spectroscopy may be used to determine the binding affinity of a complex of a peptide and an oligonucleotide, and experimental determination of binding strength is an important parameter for determination of biological activity.

Art Unit: 1631

10. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murray et al. in view of Arenas et al. in view of Sezerman et al. in view of Greig et al. as applied to claims 19, 20, 26, 27, 29, 30, 32, and 33 above, and further in view of Nagai.

The claims are drawn to a method of using an in silico virtual library of compound structure data to identify a structure that binds snRNA. The compounds are synthesized and analyzed by generation of ionized fragments (exemplified by use of mass spectroscopy) of the RNA complexed with the compound. In some embodiments the identified compounds are ranked for binding strength.

Murray et al. in view of Arenas et al. in view of Sezerman et al. in view of Greig et al. as applied to claims 19, 20, 26, 27, 29, 30, 32, and 33 above does not show use of ribosomal RNA binding targets.

Nagai reviews RNA-protein interactions. Nagai shows proteins that bind pre-mRNA on page 54, snRNA on page 55, and trp mRNA on pages 57-59.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Murray et al. in view of Arenas et al. in view of Sezerman et al. in view of Greig et al. as applied to claims 19, 20, 26, 27, 29, 30, 32, and 33 above by use of pre-mRNA, snRNA, and mRNA targets because Nagai shows that those types of RNA bind proteins and have important biological functions.

### ***Double Patenting***

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

Art Unit: 1631

harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would be obvious over, the reference claim(s). see, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir.



Art Unit: 1631

1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

13. Regarding use of the specification in obviousness-type double patenting rejections, the MPEP states in section 804:

When considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. This does not mean that one is precluded from all use of the patent disclosure.

The specification can always be used as a dictionary to learn the meaning of a term in the patent claim. In *re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent. In *re Vogel*, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970). The court in *Vogel* recognized “that it is most difficult, if not meaningless, to try to say what is or is not an obvious variation of a claim,” but that one can judge whether or not the invention claimed in an application is an obvious variation of an embodiment disclosed in the patent which provides support for the patent claim. According to the court, one must first “determine how much of the patent disclosure pertains to the invention claimed in the patent” because only “[t]his portion of the specification supports the patent claims and may be considered.” The court pointed out that “this use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. 103, since only the disclosure of the invention claimed in the patent may be examined.”

14. Claims 19-23, and 26-35 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21-30 of copending Application No. 10/104949. Although the conflicting claims are not identical, they are not patentably distinct from each other because in some respects the copending claims are generic to the instant claims regarding analysis of molecular ions, however the copending Application No. 10/104949 describes analysis of molecular ions by mass spectroscopy on at least pages 102-113

Art Unit: 1631

that may be part of the method of the claimed subject matter of copending Application NO.

10/104949. In other aspects the copending claims are a species of the instant claims regarding the limitation in the copending claims of a target binding site of less than ten contiguous nucleotides.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

15. Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

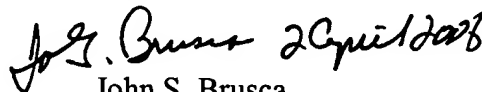
For all other customer support, please call the USPTO Call Center at (800) 786-9199. Any inquiry concerning this communication or earlier communications from the examiner

Art Unit: 1631

should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, PhD. can be reached on 571 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "John S. Brusca", followed by a date "2 April 2018".

John S. Brusca  
Primary Examiner  
Art Unit 1631

jsb